The Interpretation of the Blood Serologic Test for Syphilis

PENNSYLVANIA DEPARTMENT OF HEALTH

THE INTERPRETATION OF THE BLOOD SEROLOGIC TEST FOR SYPHILIS

From the Institute for the Control of Syphilis, University of Pennsylvania, and the Division of Syphilis and Genitoinfectious Diseases of the Pennsylvania State Department of Health.

It should never be lost sight of that the blood serologic test for syphilis, no matter what technic is employed (Kolmer, Kahn, Kline, Hinton, Eagle, and so forth), *is merely one symptom of the disease*, and that, while the frequency of positiveness in the presence of an active syphilitic infection is greater than with any other diagnostic procedure to be employed, it is subject to the many limitations inherent in all laboratory procedures. *It is, therefore, never a substitute for complete medical examination and evaluation of the patient and his family or his contacts.*

It is especially important to consider that *blood tests do not identify, define, or have any necessary relation to the infectiousness of the disease.* In the chancre stage and in mucocutaneous infectious relapses later in the course of the disease, serologic tests may be occasionally, frequently, or constantly negative, while the disease is actively transmissible; and when the disease is of many years' duration, the serologic tests may occasionally, frequently, or constantly be positive without any infectiousness whatever.

A strongly positive serologic test for syphilis presumes the presence of the disease, *but no single positive test should be accepted as diagnostic without repetition.* Fortunately, biologic false positives (from such diseases as frambesia tropica, recurrent fever, trypanosomiasis, leprosy, malaria) are infrequent in this part of the country, but almost any severe illness, particularly during the febrile stage may in the occasional individual give rise to some degree of positive reaction with sufficient frequency to make it essential to re-evaluate the case and repeat the serologic test in an afebrile period before reaching a conclusion. Technical false positives occasionally occur even in the best managed laboratories. In the absence of other disease, as shown by a thorough-going medical examination and by the employment of an approved technic in an approved laboratory, *a confirmed strongly positive serologic test must be considered diagnostic of syphilis.*

Repeat all doubtful or intermediate tests. Repeat all negative tests at least once if clinical suspicion arises. Follow up every patient who has been exposed to infectious syphilis, both clinically and serologically for at least four months. A patient who has been infected with gonorrhea or one of the other venereal diseases may have acquired syphilis at the same time and have remained symptom-free and seronegative for the acute phase of his infection. The concurrently acquired syphilitic infection may be detectable only by adequate serologic follow-up.

Remember, a serologic report is only as good as the laboratory which performs the test. Laboratories working without clinical control or unapproved by the State Health Department are apt to be inaccurate. Such approved laboratories will usually employ at least two separate tests on each specimen of blood submitted and report each test by name as "positive," "doubtful," or "negative." Full information in regard to approved laboratories may be obtained by addressing the Director of the *Pennsylvania State Serologic Laboratory* in Philadelphia.

Routine testing of syphilitic pregnant women and the infant offspring of syphilitic parentage brings up several points for special consideration, among which are the following:

(1) In the haste to employ preventative treatment for the unborn child, do not employ serologic interpretation which would not withstand criticism under other circumstances. *A single positive, doubtful, or negative reaction is of no more diagnostic significance during pregnancy than at any other time during the life of the individual.*

(2) Remember, the pregnant woman who has acquired her infection at the time of conception or early in the pregnancy may be seronegative at the time of the first prenatal visit and seropositive at term. To detect such cases *it is essential that every pregnant woman have a blood serologic test for syphilis, not only at the time of her first prenatal visit but that this be repeated at or near term.* A cord blood Wassermann, in that it is frequently negative in the presence of an active syphilitic infection in both mother and child, is no substitute for an arm venous maternal blood Wassermann.

(3) Serologic diagnosis in the infant during the neonatal period and for the first few weeks of postnatal life is rendered uncertain by two factors: First, in some seropositive mothers, syphilitic reagin traverses the placenta and enters the infant's blood stream to give a

positive reaction, independent of the presence of a syphilitic infection in the infant. Secondly, many syphilitic infants are seronegative at birth and for several weeks postnatally. *A positive cord of neonatal Wassermann is not diagnostic of syphilis and should not be used as the basis for commencement of antisyphilitic therapy. A negative reaction in the immediate postnatal period will not rule out the presence of the disease in the infant.* While a cord or neonatal Wassermann may form a base line for comparison with subsequent determinations, the true serologic diagnosis must be made by repetition of the blood tests at the age of one month, two months, three months, six months, and, if possible, at one year and two years of age. A confirmed strongly positive test in an infant of more than one month of age may ordinarily be considered as diagnostic of syphilis. A negative reaction at the age of six months will serve to rule out congenital infection in almost every, if not every, case.